

OUR PLANT IMMIGRANTS

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FOREIGN SEED
and PLANT INTRO-
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A BUNCH OF DATES
GROWING IN THE DESERT
REGION OF SOUTHERN CALIFORNIA

TO the traveler who has wandered with men of many tastes all over the world, the thought must often have come, "Of what use are all the strange plants which make up the landscapes of the pictures?" The globe, with its kaleidoscopic panorama of people, animals, and plants, has been whirled before you, as it were, and you have in your minds the picture of a

ball circling through space, covered with a film of plants, animals, and men in constant change. So varied is this film of plants that there are probably half a million distinct, specific forms in it, and yet man uses only a few hundreds for his own purposes.

To change, in a measure, the distribution of the really useful plants of the world is what the office of foreign seed and plant introduction of the Department of Agriculture is trying to do. The motive underlying this work might be called the ambition to make the world more habitable. If one is inclined to be pessimistic with regard to the food supply of the world, he has only to talk to any one of the enthusiasts of the Department of Agriculture to get a picture of the widening vista of agricultural possibilities which would make him realize that the food problems of the race are not hung in the balance of our great plains area, and that the food-producing power of the world is still practically unknown, because we have just begun to study in a modern way the relative performance of different plants.

We may not always grow the plants we do now. Some of them are expensive food producers, some produce foods that are difficult to digest, and some we may leave behind as we learn to like others better.

What to grow was not so serious a question to the early Phoenician peasant, who knew perhaps a dozen crops, as it is becoming to the American agriculturist, who can pick from the crops of all the world the one best suited to his land and climate. Changes come so rapidly nowadays that if a man today talks of "pears" he may mean what are ordinarily thought of as pears, or he may refer to alligator pears which he is growing in Florida, or prickly pears which he is cultivating in Texas. Both the alligator pear and the prickly pear have come in as crops to be reckoned with within the past fifteen years, and already the stock-raisers of the South are wondering if they should plant spiny or spineless forms of the prickly pear cactus, and the fruit-growers of Florida are inquiring as to which of the several varieties of alligator pear tree is going to be the most productive and profitable.

To help find the plant which will produce the best results of any that can be grown, on every acre of land in the United States, is, in general, the broad policy of the office of seed and plant introduction of the bureau of plant industry.

Although begun in a systematic way and as a distinct activity of the department in 1897, it has barely touched the fringe of its possibilities. The 10,000 different plant immigrants which have come in, and have either died or are now growing somewhere in this country, represent a small beginning only, and have merely helped to show the greatness of the possibilities which progress in agricultural research is creating.

"You will soon have all the crops in," is the remark of those who have given the matter little thought. Our own lives change with every moment of time, and so do the lives of plants. The strains of potato which our grandfathers grew are, with few exceptions, different from the strains in vogue today; and, fitting their lives into the various conditions of soil and climate, the original wild South American species of potato, *Solanum tuberosum*, assumes in the hands of men a thousand different forms.

In whatever parts of the world new forms may spring into existence it matters not; our potato-growers should be able to try every sort of importance and every wild, hardy species, whether it comes from the manse of a Scottish parson, is discovered as a wild species along the Paraguay river by an American railway bridge builder, is found among the mountains of Colombia by a Jesuit priest, is gathered by a forest ranger in the dry regions of an Indian reservation in New Mexico, or is secured by a trained collector from the Chiloe Islands off the coast of Chile. It makes little difference; they must all come in as plant immigrants to show what they can do in the gardens of American experts. There is always the chance that they may be thrown out as unprofitable; but, if they have desirable characters, they can be blended with others, or exploited with others, if they are superior for any of the potato regions of this country.

It may be new to many that every day plant immigrants from different parts of the world arrive in Washington, and every day, through the mails, hundreds of these disinfected arrivals go out to find a new home in some part of the country.

It is a difficult matter to give an adequate impression of the magnitude and importance to the country of this stream of new plant immigrants which for 14 years has been pouring



THIS BAMBOO GROVE IN
HAWAIIAN ISLANDS
CALIFORNIA



A 15-ACRE GROVE OF
PALMS IN CALIFORNIA



PLANT IMMIGRANTS HAVE BEEN



THE DATE PALM, ONE OF
THE MOST IMPORTANT
PLANT IMMIGRANTS

into the country, and has been directed by a great and growing body of research men and women into those regions where it was thought they might make their homes.

In the brief space of a short article, and to avoid what would be almost a bare enumeration of plant names, I prefer to treat only of a few of the many important problems with which the office is working, passing by, also, the introduction of the Durum wheat, the Japanese rice, and giving the Siberian alfalfa, which are earning for the farmers of the country many millions of dollars a year, a bare mention, for the reason that they have been so often described in the newspapers of the country.

The mango is one of the really great fruits of the world. India, with its hundreds of millions of people, has for centuries held it sacred, and celebrates annual ceremonies in its honor. The great Mogul Akbar, who reigned in the 16th century, planted the famous Lak Bag, an orchard of a hundred thousand mangoes, and some of these still remain alive. It is a fruit the importance of which Americans are at last beginning to recognize, notwithstanding the unfortunate discredit which the worthless seedling mangos of the West Indies have given it in the minds of Americans generally.

There are probably more varieties of mango than there are of peaches. I have heard of one collection of 500 different sorts in India. There are exquisitely flavored varieties no larger than a plum, and there are delicious sorts the fruits of which are six pounds in weight. In India, where the wage of a coolie is not over 10 cents a day, there are varieties which sell for \$4.60 a hundred, and the commonest sorts bring over a cent apiece.

The great mango trees of India are said to reach a height of 70 feet, and are so loaded down with fruit that over \$150 worth has been sold from a single tree.

These fine varieties, practically as free from fiber as a freestone peach, can be eaten with a spoon as easily as a cantaloupe. Trainloads of these are shipped from the mango-growing centers of India and distributed in the densely populated cities of that great semi-tropical empire; and yet, notwithstanding the great importance of this fruit, the agricultural study of it from the new standpoint has scarcely been begun. I believe that it has never, for example, been tested on any but its own roots.

We have gathered together in Florida and Porto Rico and Hawaii more than a hundred varieties, and some which we have fruited have already attracted the attention of the fancy fruit-dealers, who agree that the demand for these will increase as fast as the supply can be created, and maintain that extravagant prices, such as 50 or even 75 cents apiece, will be paid for the large, showy, delicious fruits. Last year 300 dozen Mulgoba mangos were sold in Florida for \$3 a dozen. The Governor of Porto Rico has committed himself to a policy which, if carried out, will cover the island with hundreds of thousands of mango trees of the better varieties.

One of the oldest cultivated plants in the world is the date palm. At least 4,000 years ago it was growing on the banks of the Euphrates, and it is this plant and the camel that together made it possible for the Arabs to populate the great deserts of northern Africa and Asia. The date palms would grow where the water was alkaline, and the camels were able to make long journeys across the desert to take the dates to the coast to market and sell them for wheat and olives.

In these deserts of the old world, millions of Arabs live on dates, for the date palm can be cultivated on land so salty as to prevent the culture of any other paying crop, and it will live in the hottest regions on the face of the globe; not even a temperature of 125 degrees F. will affect it. This obliging plant does not, however, insist on such temperatures, but will stand some frost, and has been known to live where the mercury falls to 12 degrees F.

It is also the only wood obtainable in the oases of the Sahara, and on the shores of Arabia boats are made of it.

The date palm has both male and female flowers and they occur on separate plants, and the Arabs have to plant one male for every plantation of a hundred females, making a harem as it were. The artificial pollination or fertilization of the female palms is one of the most interesting processes practiced with plants, a spray of flowers from a male palm being bound with a bit of palm-leaf fiber in each inflorescence of the female tree. Propagation of the date palm can be accomplished by means of seeds, or suckers, which are thrown up at the base of the palm. Suckers will start, however, on land so salty that the seeds refuse to grow on it.

Four years from seed, trees of some varieties begin to bear and in six years will have paying crops of dates. They live to a much greater age than almost any other of the fruit trees, and specimens a century old are said to be still a good investment.

The date is not a dry-land crop, but requires irrigation to grow and produce fruit. A plantation once established requires to be kept free of weeds, to be pollinated when the palms come into bloom, and to have the fruit har-

vested when ripe. Of insect pests we know too little as yet, though the prospective planter should count this in his estimate of expense; remembering, however, that modern scientific methods have overcome the greatest fruit pests, and that these on the palm are not different in general character from those which are now under complete control.

Very little pruning of the palms is necessary, and the harvesting is very simple, since the dates grow in great bunches, which often weigh from 20 to 40 pounds apiece.

There are over a hundred varieties of dates now growing in the government gardens in California and Arizona, from which are being distributed to prospective planters

suckers as they grow. This accomplishment of the Department of Agriculture is not the result of any one man's effort, but the product of at least a dozen minds working over a period of 20 years and in seven different countries.

There are among these hundred varieties those which candy on the tree, others which are used mainly for cooking, and some which are hard and not sticky. There are early varieties and later-ripening ones, varieties short and long, and every sort can be told by the grooves on its seeds.

The date as a delicacy is known to every American child, but, as a food, remains to be discovered by the American public. When the date plantations of Arizona and California come into full bearing, as they should in about ten years, the hard, dry dates, for example, now quite unknown on our markets, are sure to come into prominence and find their way to the tables of the poor as well as of the rich. The heat of our American summers is forcing us to study the hot-weather diets of other countries, and dates are sure to become important items of food.

The persimmon of the South, on which the opossum fattens, is a very different fruit from its relative the kaki, or persimmon of the Orient, the growing of which is so great an industry in Japan as to nearly equal the Japanese orange-growing industry in importance. Our persimmon is a wild fruit, which will some day be domesticated, while the kaki has been cultivated so long that it is represented by different forms and colors. It is true that the Oriental persimmon has been grown in this country; in fact, the census records a production of 68 tons; but this is scarcely a beginning as compared with the 194,000 tons which is the output of Japan.

We have misunderstood the persimmon. Our own wild ones we can eat only after they have been touched by the frost, and the imported Japanese ones we have left until they become soft and mushy and almost on the verge of decay. We never thought until quite recently of wondering whether in a land where the persimmon had been cultivated for centuries they would not have worked out some artificial method for removing the objectionable pucker. In Japan we find this is done by packing the fruit in barrels saturated with sake, and Mr. H. C. Gore, of the Department of Agriculture, is now working out new methods of processing the Oriental persimmon, so that it can be eaten when hard as an apple, and there will no longer be any reason why it should not take its place among the great fruits of the country.

The whole question of the improvement of the persimmon has been opened up, and we are getting for this work the small-fruited species called "lotus," from Algeria; a tropical species with white, cheese-like pulp, from Manila, Mexico, Ethiopia, and Rhodesia; species from Bangalore, from Sydney, from Madras, from the Nankai Pass, in China, and from the Caucasus.

If the Oriental timber bamboo had produced seeds oftener than once in 40 years it would long ago have been introduced and be now growing in the South. The fact that it had to be brought over in the form of living plants, and that these plants required special treatment, has stood in the way of the quick distribution of this most important plant throughout those portions of America where it will grow. After several unsuccessful attempts, a beginning has at last been made, and the department has a grove of Oriental bamboos in northern Florida, and a search is being made in different parts of the world for all those species which are adapted to our climate.

In this country I predict it will be used earliest for barrel hoops, for cheap irrigating pipes, for vine-stakes and trellises, for light ladders and stays for overloaded fruit trees, for baskets and light fruit shipping crates, and for food. As wind-breaks and to hold canal banks and prevent the erosion of steep hill-sides, there are species which excel all other plants, while for light furniture and jalouses it is sure to find a market whenever the green timber is available.

HAPPENINGS IN INDIANA

Lawrence.—Three grains of corn that had begun to sprout were found in the appendix of James B. Powell, a wealthy farmer, when he was operated upon for acute appendicitis. The appendix was eleven inches long. Powell had a habit, he said, of eating a few grains of corn every time he fed his stock.

Rushville.—The charred body of Mrs. Minnie Harris, forty-five years old, was found in the ruins of her country home northeast of this city. Mrs. Harris was the wife of L. B. Harris, a stock dealer, and was alone in the house when the fire started in an upstairs room, and it is supposed she was overcome while fighting the flames.

Terre Haute.—East-bound passenger train No. 30, known as the "Twenty-four hour St. Louis to New York train," crashed head-on into a freight train on the main track within two hundred yards of the station. Engineer J. C. Millam of Indianapolis, riding in the cab of the freight engine, was killed.

Anderson.—Charles Harmon, nineteen years old, is in jail on a charge of assaulting, with intent to kill, Theodore Eckles, thirty-two years old. The men are drivers of garbage wagons and, while emptying barrels in the rear of a hotel, became involved in a quarrel. Harmon used a spade on his companion, who, the physicians say, will die.

Greenfield.—The movement has been started in this city for a public park along Brandywine creek which was made famous by James Whitcomb Riley. It is proposed that the city buy land on both sides of the creek, which will include the "old swimming hole," and co-operate with the Indiana Forestry association in organizing a local branch.

Shelbyville.—Mrs. Mary Montgomery, one of the very few real daughters of the American Revolution, celebrated her ninety-second birthday anniversary at her home here. She was born in Butler county, Ohio, March 12, 1820, and her father, Philip Young, was a soldier in the Revolutionary war.

Marion.—Fire destroyed four frame buildings at Thirty-eighth street and Home avenue with an estimated loss of \$10,000. The buildings were beyond the city fire limits. The restaurants of Minerva Sanders and James Tucker and the drug stores of Joseph Stoebe and Henry Berger were burned. There was no insurance.

Shelbyville.—The town of Waldron, near here, is to have a national bank with a capital stock of \$50,000. Dr. T. J. McCain, Henry C. Jones, Thomas Standifer and Roy Jones are the organizers. The last-named will be cashier. A lot, on which a bank building will be erected, has been purchased for \$1,500.

South Bend.—For entertaining the Indiana G. A. R., which will hold its annual encampment in South Bend in May, the chamber of commerce has arranged to raise \$5,000 by public subscription next Monday. Forty men will canvass the city under the direction of Mayor Charles L. Goetz. Officials of the G. A. R. will arrive in South Bend Friday to aid in the arrangements for the reunion.

Shelbyville.—Clarence Goodrich, ten years old, son of Bert Goodrich, was ground to death by the White City special on the Big Four. He jumped from a freight train on which he and a score of boys were stealing a ride, and was caught by the passenger train.

Rochester.—A Wells-Fargo express train was badly wrecked about five miles east of this city. Three cars left the track and were piled in a mass. Expressman Downing of Huntington was mangled beneath the debris and it is thought he will die.

Marion.—John H. Hicks, the oldest resident of Upland and the only surviving Mexican war veteran in the county, excepting one or two in the Marion National Military home, celebrated his eighty-fourth birthday anniversary. Mr. Hicks has been justice of the peace at Upland for sixteen years.

Newcastle.—After nearly three weeks' deliberation to find a plan by which they could curb the divorce evil, the majority of the ministers of Henry county made public a signed statement in which each agrees not to perform the marriage ceremony where any divorced persons figure unless they be the innocent party in a case where the charge is statutory.

Richmond.—The Richmond committee in charge of the G. A. R. encampment held here last year has set aside \$700 as a permanent endowment, the proceeds from which will be used for the perpetuation of Memorial day in this city. This sum remained after all expenses had been paid in entertaining the old soldiers at their encampment. It is hoped to add to this endowment fund, so that each year a fitting program may be carried out in memory of the soldiers.